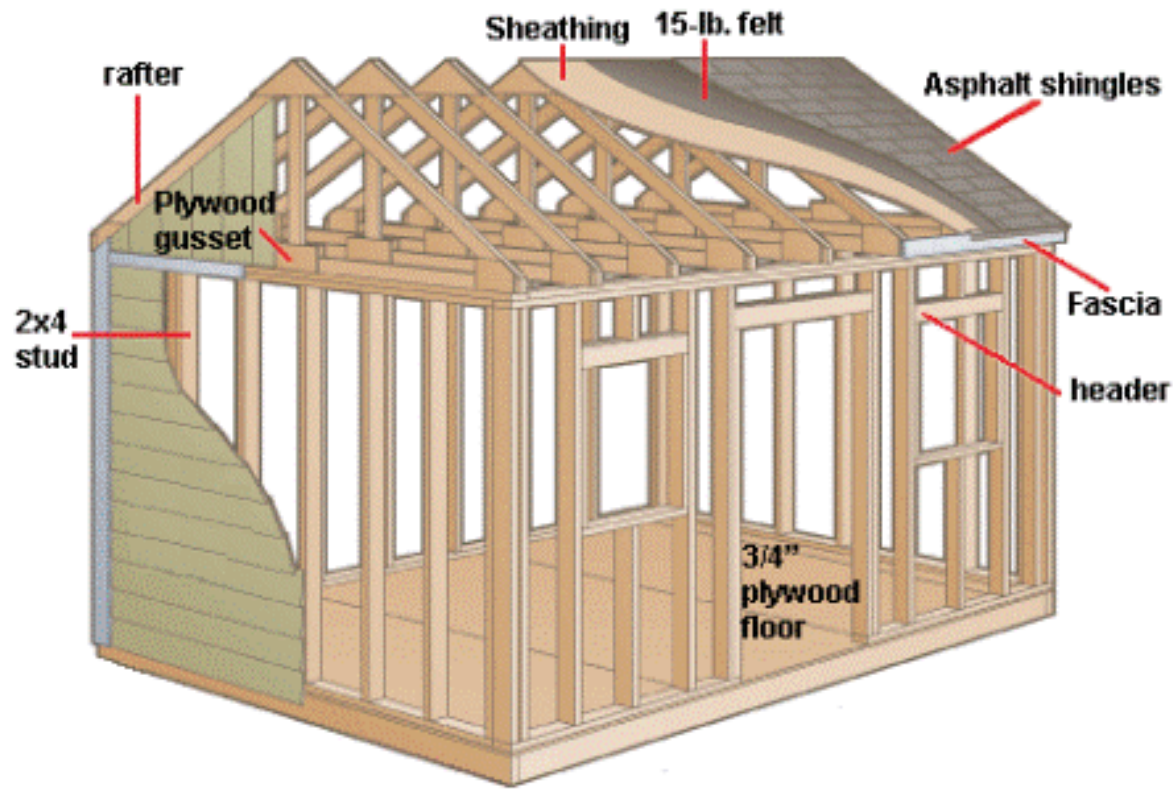


FRAMING 101



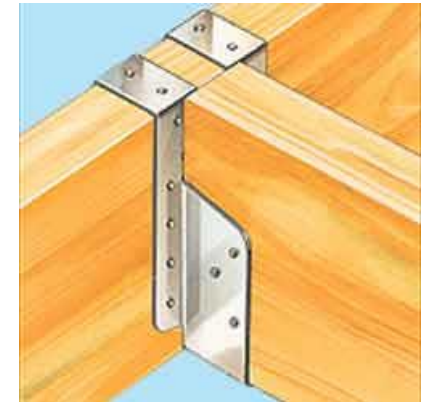
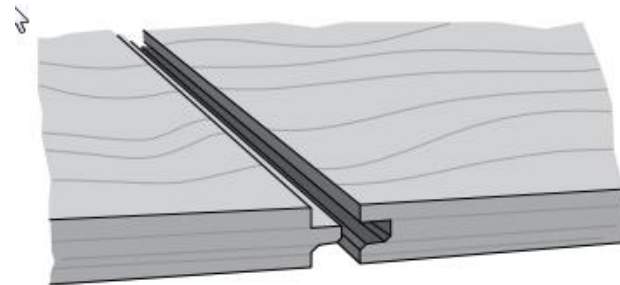
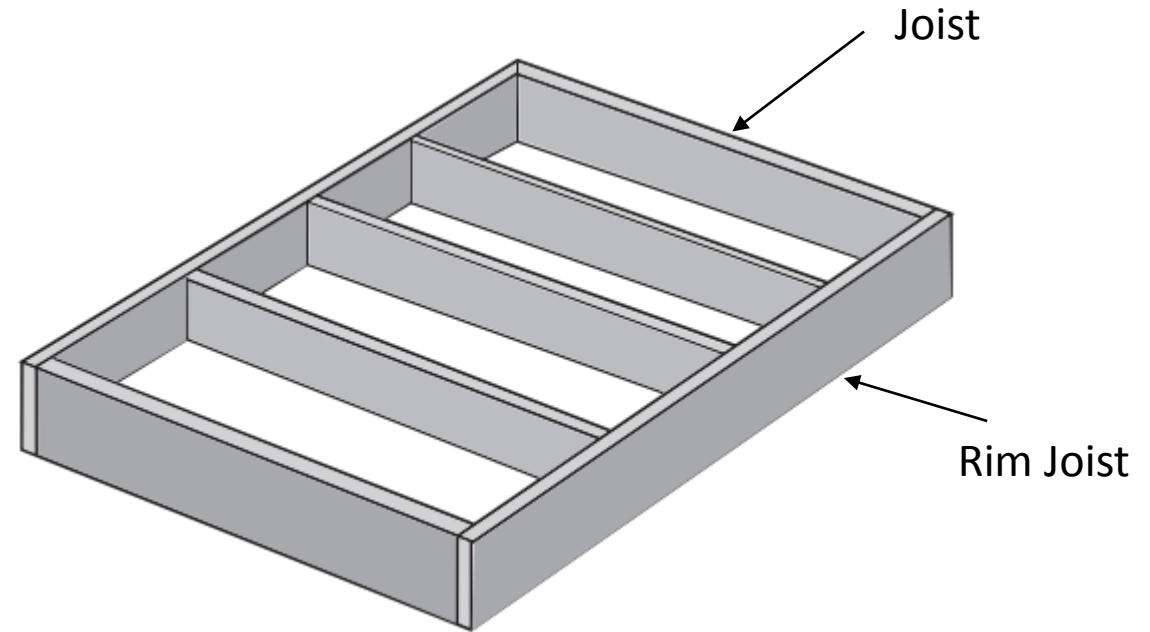
Framing the Floor

Floor joist: one in a series of parallel framing members that support a floor load.

Rim joist: the final joist that attaches to the end of the row of joists that support a floor or ceiling. A rim joist forms the outside edge of the box that makes up the floor.

Joist hanger: a metal bracket used to attach and support the ends of a wood joist to beams or other structural components.

Floor sheathing (sheeting): plywood, oriented strand board (OSB), or lumber used to close up floors before the installation of finish materials on the surface. This is also known as subflooring. Tongue and groove plywood (T&G) is recommended.



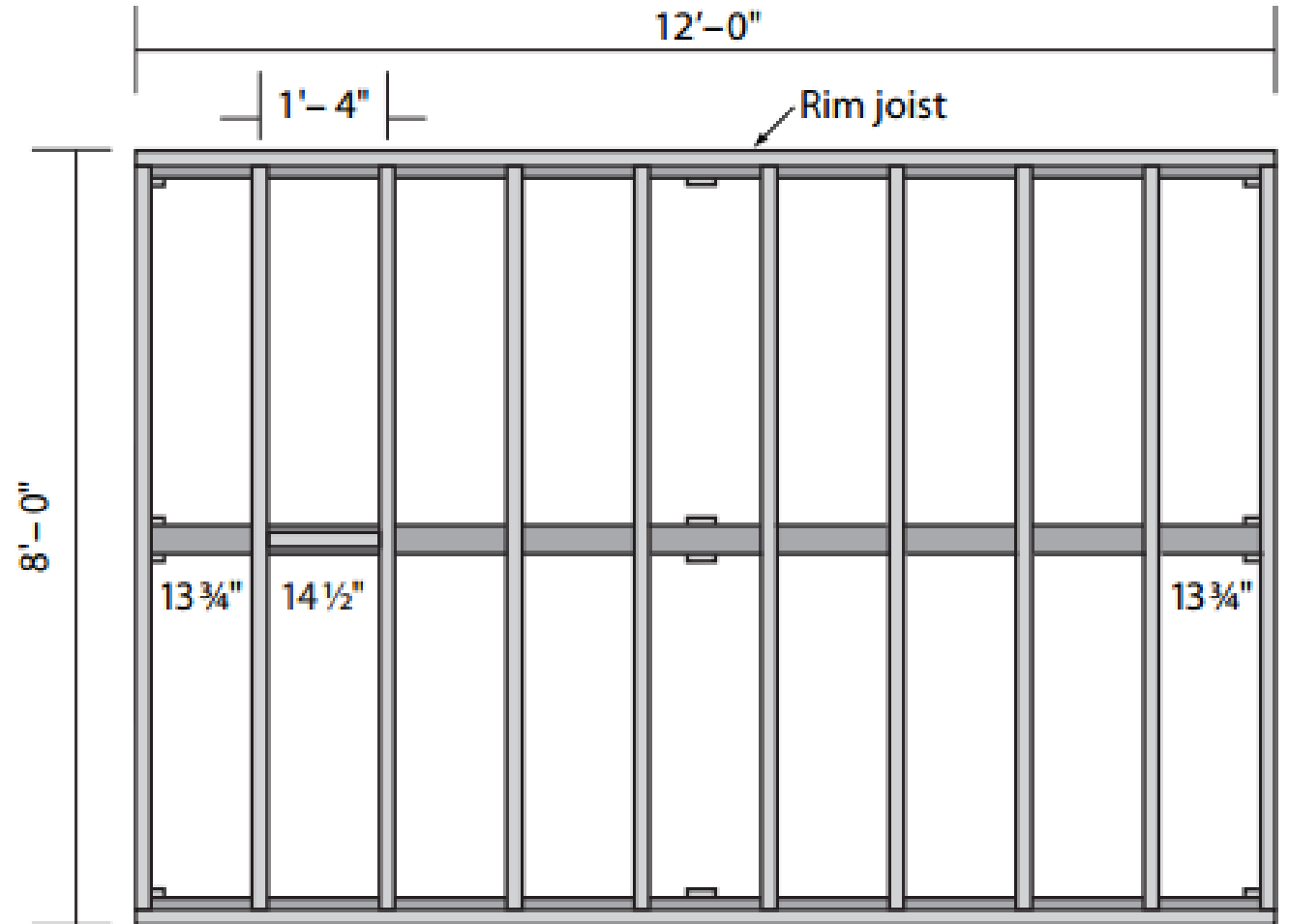
Floor Joist Spacing

Floor joists are 16" on centre

Plywood sheets are 48" x 96"

2x4s are 1 1/2" x 3 1/2"

Why in diagram are outside ones 13 3/4" ?

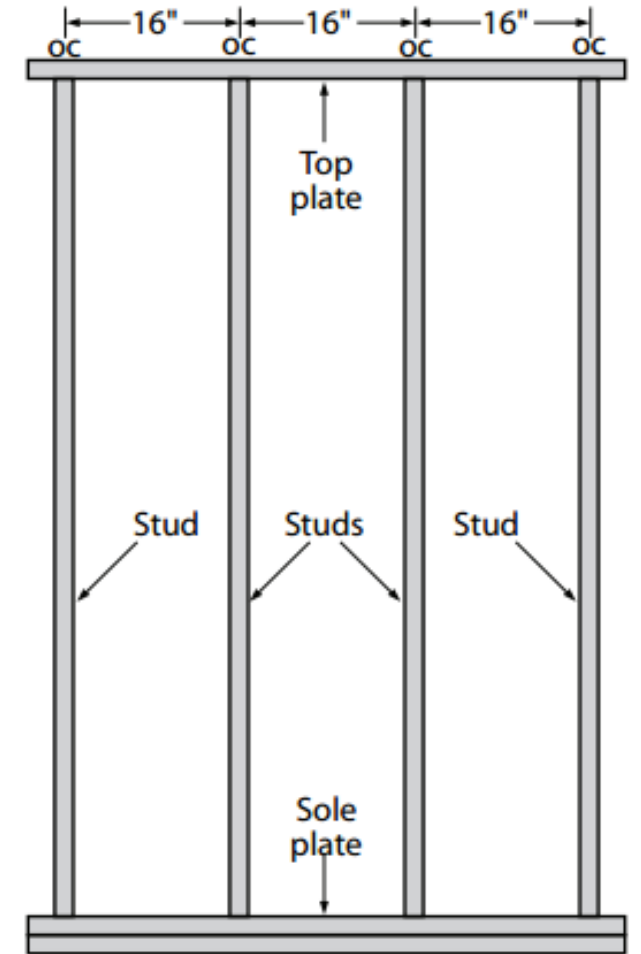


Framing a Wall

Wall stud: a vertical member in light frame wall construction usually spaced at 16" or 24" centre to centre.

Bottom Plate: The lower horizontal member of a wood-frame wall nailed to the bottom of the wall studs and to the floor framing members. Also called sole plate

Top Plate: The horizontal member nailed to the top of the partition or wall studs and usually doubled to transfer loads from above into the wall studs



Window Framing

Cripple: Short vertical framing installed to transfer load from a top plate to a window or door lintel and partitions

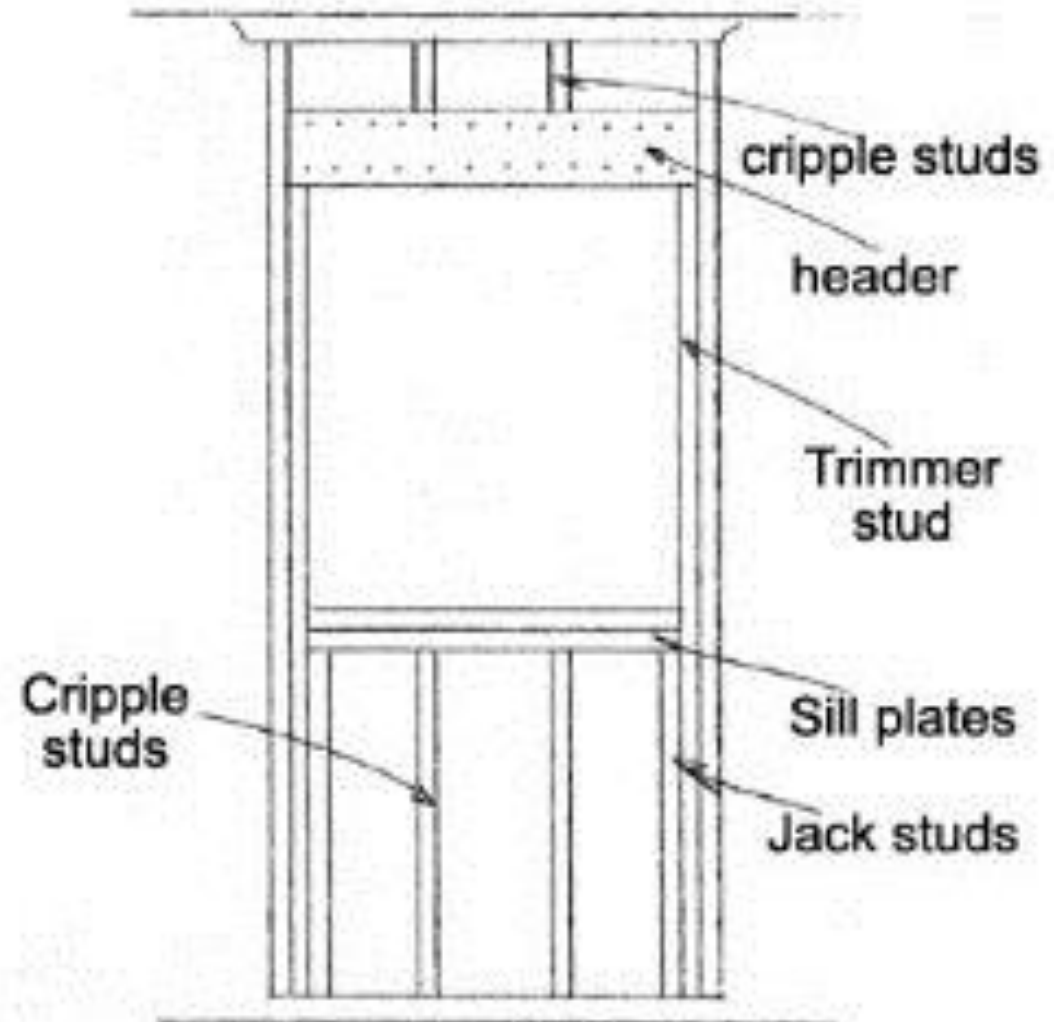
Lintel: A horizontal structural member (beam) that supports the load over an opening such as a door or window. Also called a header.

Jack Stud: A block or short stud nailed to a rough door or window studding to add strength and provide a solid bearing for the lintel and nailing support for the finished door jamb or window frame

Trimmer: A beam or joist alongside an opening and into which a header is framed.

Sill plate: The horizontal member forming the bottom of an opening for a door or window.

Rough Opening: plus 2-1/2 inches in height and width.



Door Framing

Cripple: Short vertical framing installed to transfer load from a top plate to a window or door lintel and partitions

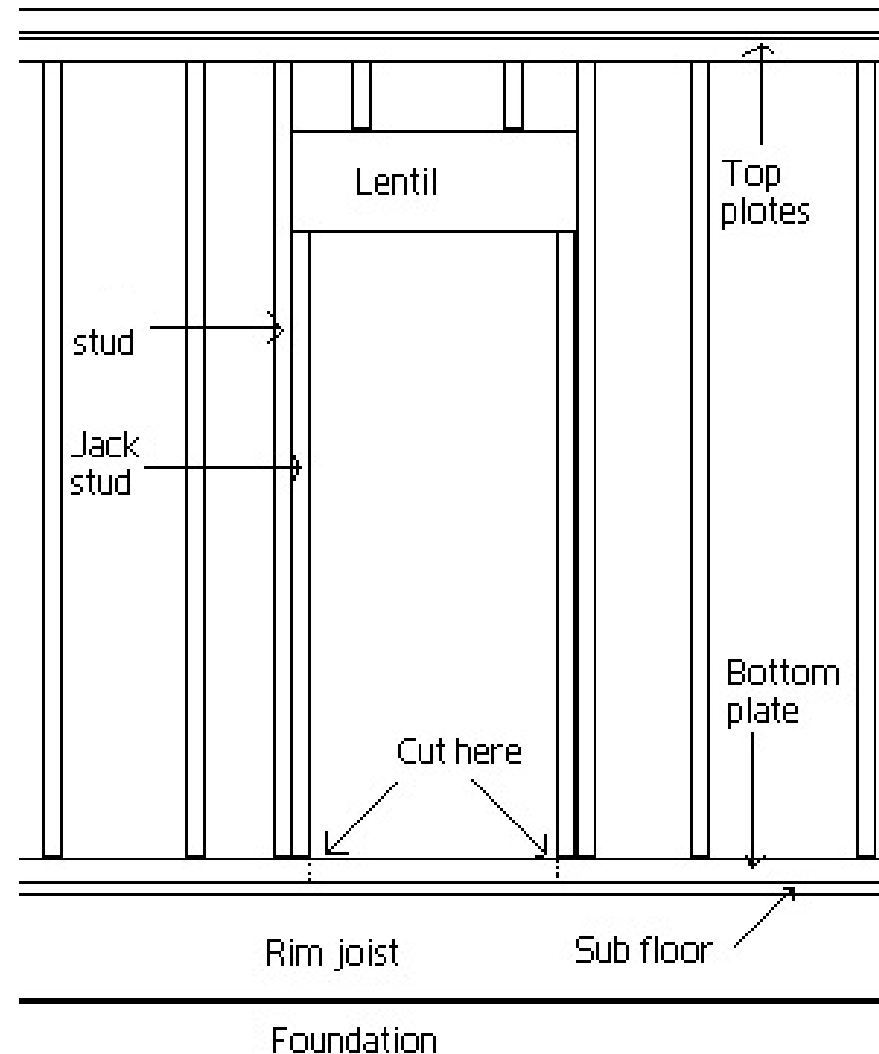
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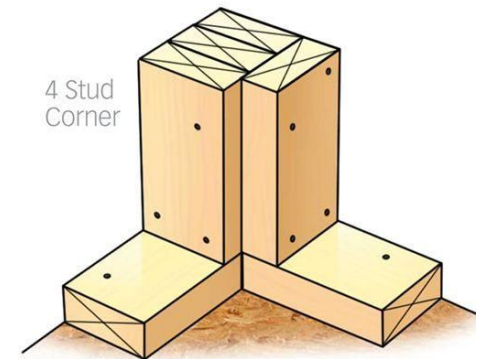
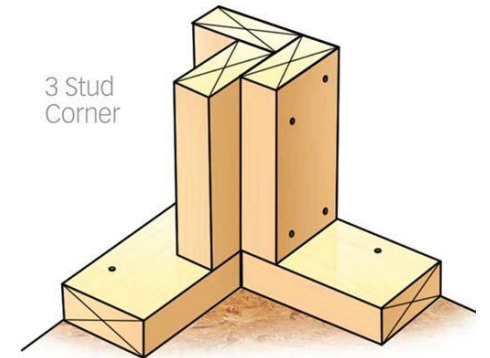
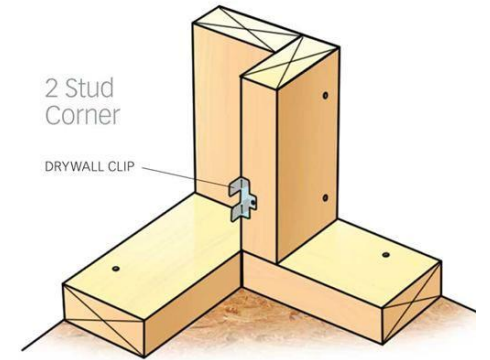
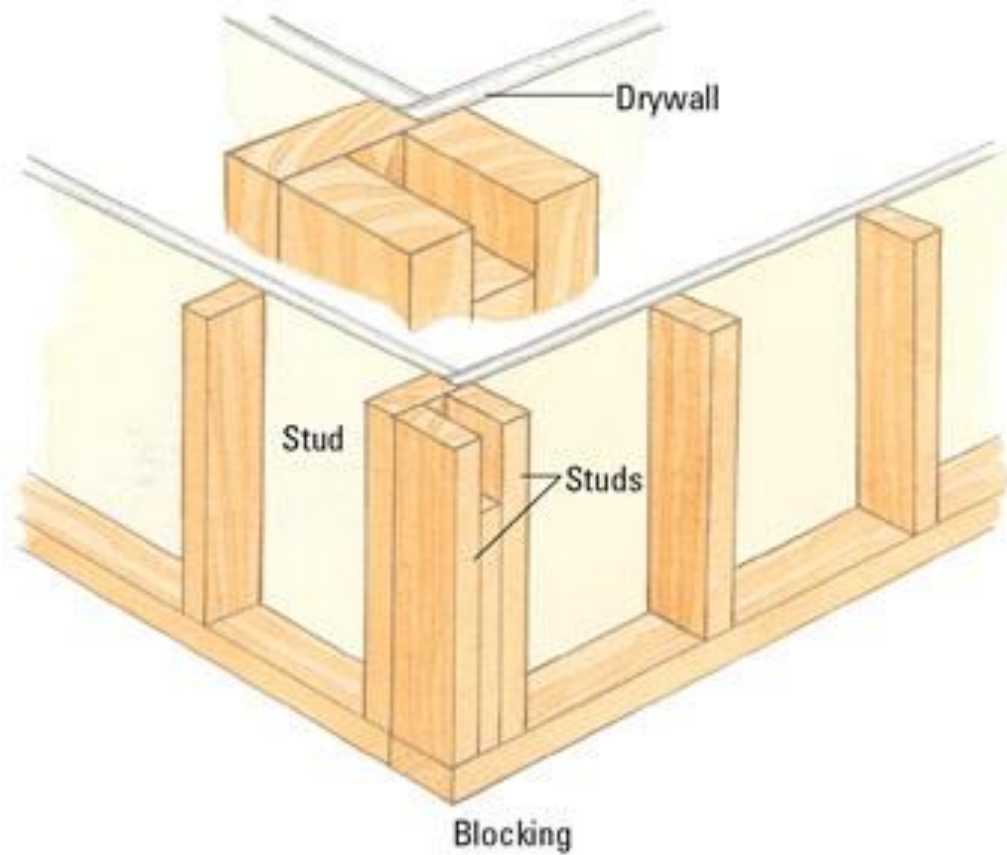
Rough Size: Just add 2" to the width of the actual door size. You should add 2-1/2" to the height of the actual door. This will give you room to space the door frame off the sub-floor.

NOTE: a door is typically 6' 8" or 80" tall



Framing Corners

- Must have supporting material for drywall
- Different variations of what can be done in a corner



Assignment

- Build a 48" x 48" floor 16" on Centre Joists with an OSB floor
- Build 2 walls that are 48" x 8' 3" tall (don't cut 2x4's)
- Build a 41" wall with a roughed in window that would fit a 36" tall by 30" wide window
- Build a 41" wall with a roughed in doorway for a 30" door
- 82-1/2 inches is "header height" for windows and doors (use 2x4 for the header)
- Nail all studs, plates, etc together, but SCREW the 4 wall corners and floor so it can be taken apart at the end of class.

Roofs 101



Hip Roof



Gable Roof



Shed Roof



Saltbox Roof



Gambrel Roof



Gullwing Roof



Half-Hip Roof



Mansard Roof

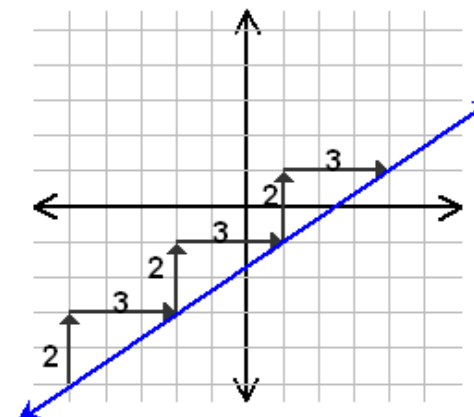


Dormer Roof

Rise: the vertical change in height per unit of horizontal movement or run

Run: the horizontal change in distance, typically in construction we use 12" or one foot and express roof slopes as units of rise per single unit of run, such as 3 inches of rise per 12 inches of run or 3" per ft.

Pitch/Slope: Roof pitch or slope is the angle of the roof surface above the "flat" or horizontal plane

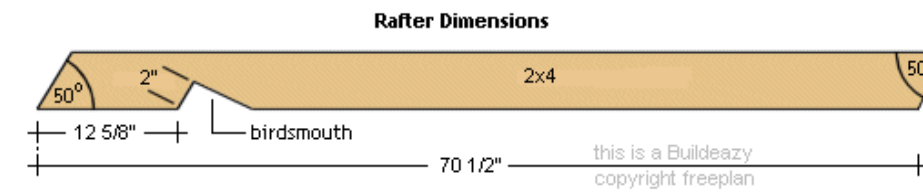
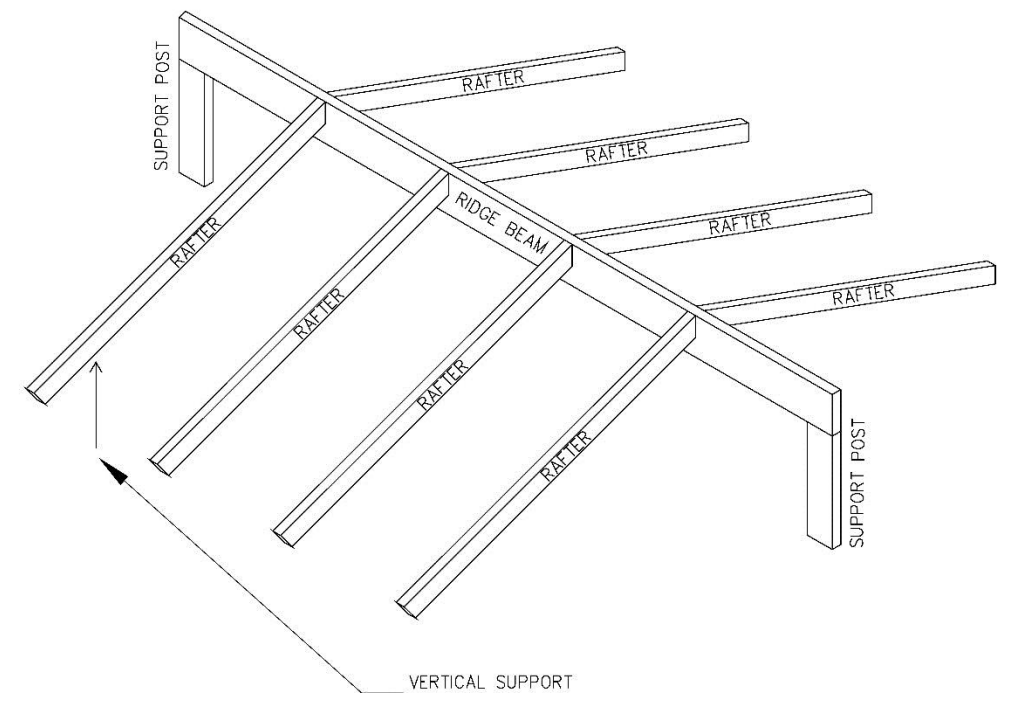
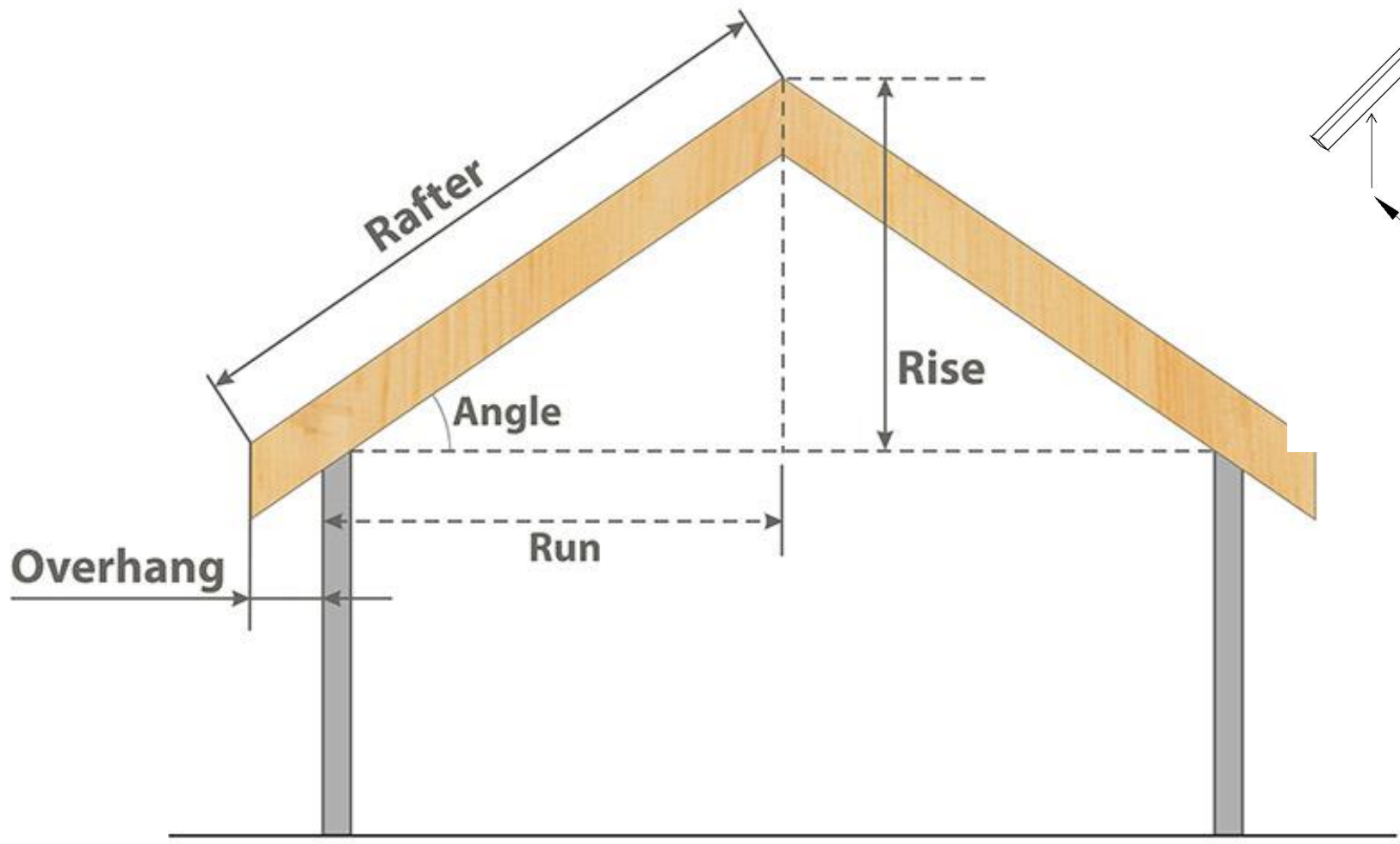


$$\text{Rise} = 2$$

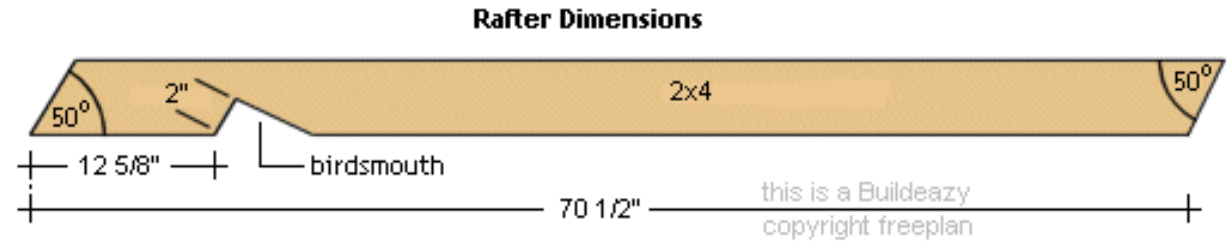
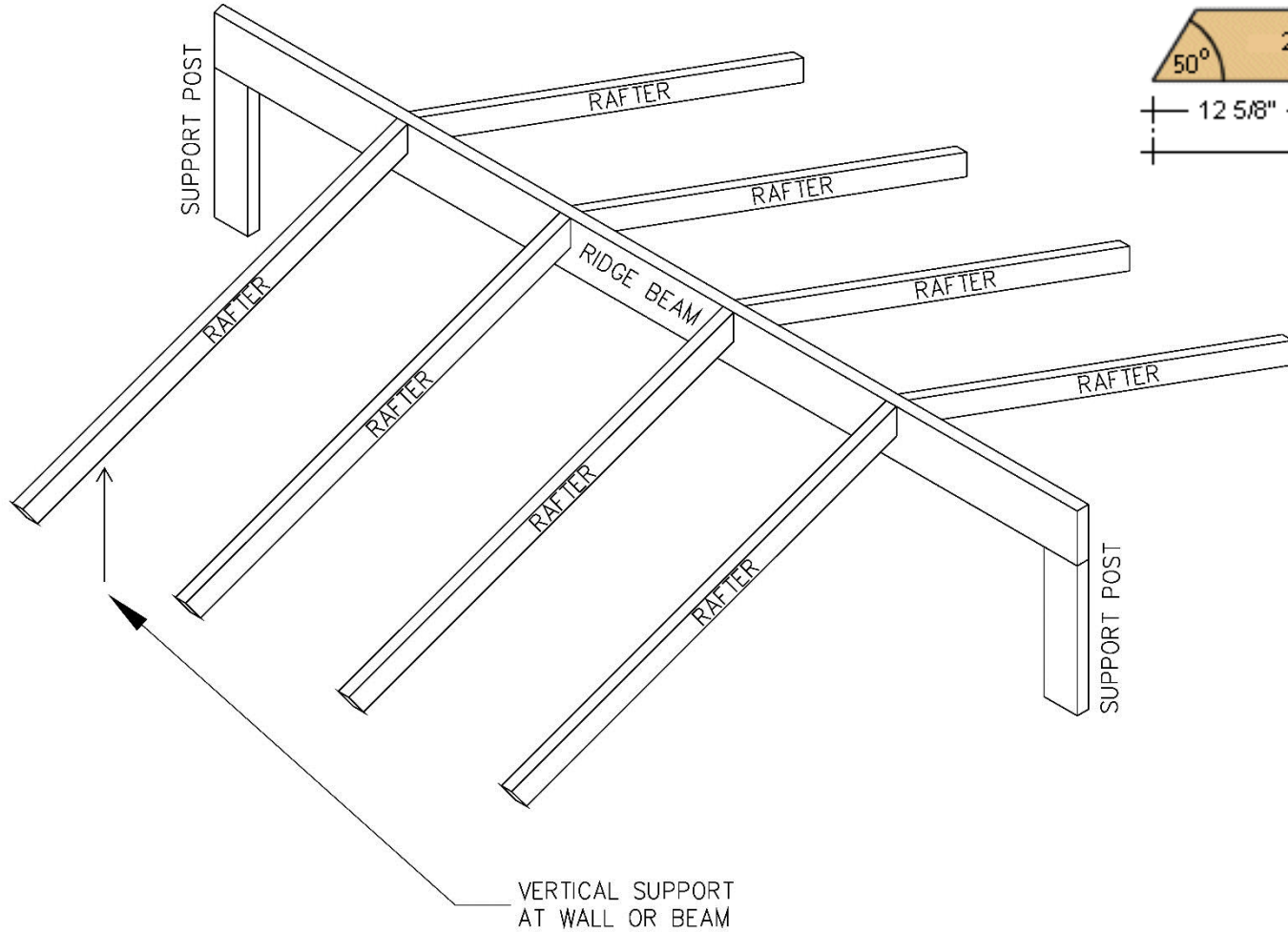
$$\text{Run} = 3$$

$$\text{Slope} = \frac{\text{Rise}}{\text{Run}} = \frac{2}{3}$$

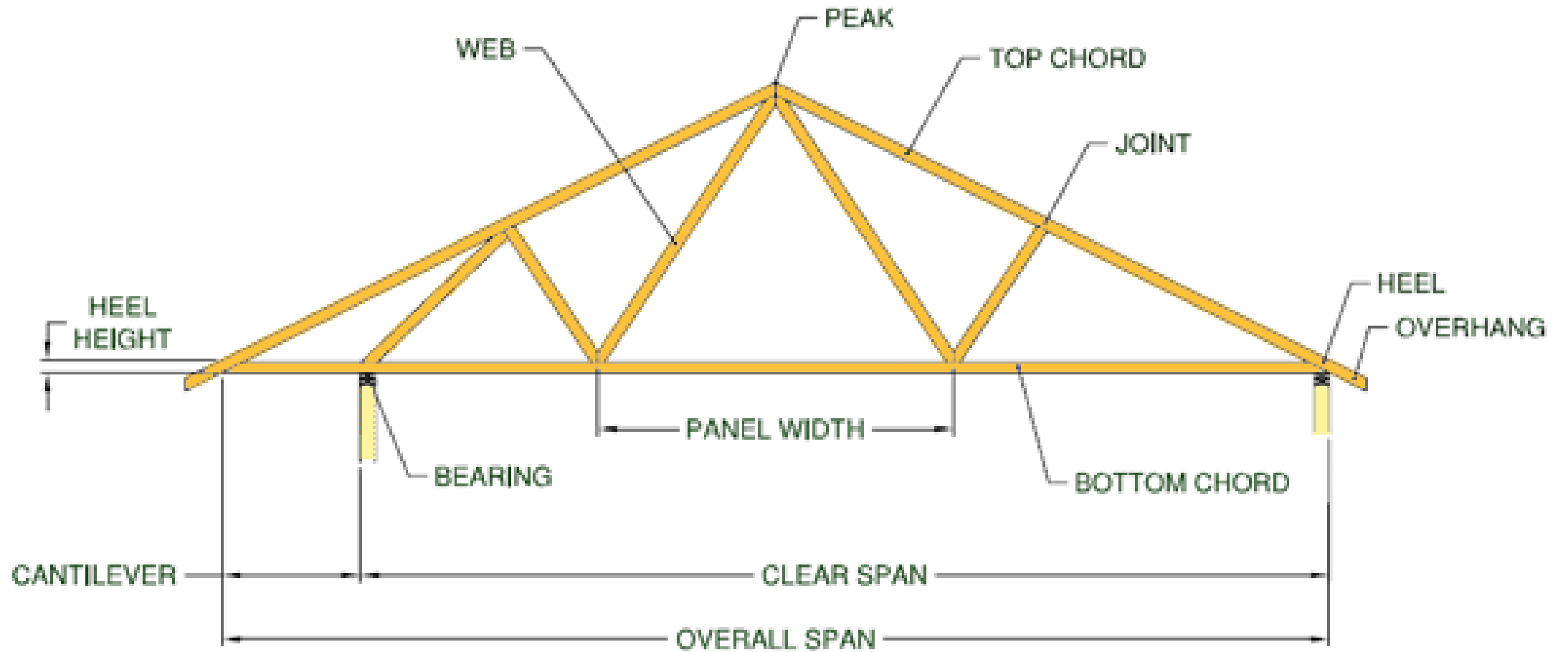
Roofs Rafter



Roofs Rafters



Roofs Truss



Roof Pitches



Roof slope affects roof life (steeper roofs drain better so may be more leak resistant), as well as roof installation cost (steeper roofs are harder or even impossible to walk-on without using roof jacks or scaffolding, increasing labor costs to install roofing).

Most materials designed for water-shedding roofs are designed for slopes above 4:12.

Roof Pitches (Cutting Angle)

